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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 09/763,845
Filing Date: February 27, 2001
Appellant(s): HERRMANN ET AL.

Frank C. Nicholas
For Appellant

EXAMINER'S ANSWER

(1) Real Party in Interest

This is in response to the appeal brief filed 05/19/2005.

A statement identifying the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) Status of Claims

The statement of the status of the claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Invention

The summary of invention contained in the brief is correct.

(6) Issues

The appellant's statement of the issues in the brief is correct.

(7) Grouping of Claims

The rejection of claims 14-33 stand or fall together because appellant's brief does not include a statement that this grouping of claims does not stand or fall together and reasons in support thereof. See 37 CFR 1.192(c)(7).

(8) Claims Appealed

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) Prior Art of Record

6,389,056 B1	Kanterakis et al.	05-2002
6,400,752 B1	Suzuki et al.	06-2002
6,621,807 B1	Jung et al.	09-2003

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 14-33 rejected under 35 U.S.C. 103(a).

This rejection is set forth in a prior Office Action, mailed on 08/03/2004, in paragraphs 3 and 4. This rejection is reproduced below for the Board's convenience.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 14-17,21-28 and 32-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanterakis et al. USP 6,389,056 B1 (cited previously) in view of Suzuki et al. USP 6,400,752 B1 (Suzuki).

Regarding claims 14,24,26 and 33, Kanterakis teaches a method and apparatus of a wireless network comprising a base station and a plurality of terminals (see Fig.1) for exchanging user data and control data (see Fig.7) over a

contention channel wherein Kanterakis teaches a common-packet channel is a contention based, therefore teaches a contention channel. (note col.2, lines 56-63) Further, Kanterakis teaches in the base station a device for correlating by matched filter (315 in Fig.3) a signaling sequence transmitted by at least one terminal to indicate the wish to use a contention channel (access-burst signal, note col.5, lines 63-67) and for detecting the pulse evolved from a received and correlated signaling sequence (see Fig.6 and note col.6, lines 37-46).

Kanterakis teaches wherein the random access bursts are spread by an orthogonal Gold code, as recited in claim 17. (note col.1, lines 17-23) Kanterakis also teaches a terminal (see Fig.4) transmitting a first signaling sequence by multiplying the output signal by a spreading sequence generator (427), which generates a pseudo random square-wave signal. Therefore, access bursts, transmitted as a first signaling sequence by the terminal, multiplied by the spreading sequence generator (427), are a signaling sequence.

And further, in that the base station, after the detection of the signaling sequence (access-burst signal), is provided for transmitting a provision message (ACK signal, note col.6, lines 47-52) over a contention channel (common-synchronization channel) to be used by the assigned terminals.

However, Kanterakis does not teach wherein the terminals are assigned to the base station. Suzuki teaches correlation of received signaling sequence by an assigned terminal, assigned to a host terminal operating in a wirelesss network

environment (see Fig.12 and note col.2, line 25- col.4, line 35 and col.10, lines 44-61).

Therefore, it would have been obvious to one skilled in the art at the time of the invention to implement Kanterakis' teaching by assigning the terminals to be assigned to a base station for the purpose of supporting a wireless network environment where the terminals are assigned to the host terminal functioning as a base station.

Regarding claims 15 and 27, Kanterakis in view of Suzuki teach all subject matter claimed, as applied to claim 14 or 26. Kanterakis further teaches a terminal provided for transmitting a signaling sequence during a certain time slot (note col.11, lines 40-57) of a transmitting-end reference frame, and after receiving a provision message (ACK signal) from the base station, for transmitting a terminal identification data packets over at least one contention channel. (note col.9, lines 31-45)

Regarding claims 16 and 25, Kanterakis in view of Suzuki teach all subject matter claimed, as applied to claim 14 or 24. Kanterakis further teaches correlating the received signal (by a matched filter, 315) to generate the pulse, and further detecting the peak evolved, (note col.6, lines 1-19) wherein the base station detects the power level of the signal to determine signaling sequence comprising pilot signals.

Regarding claims 17 and 28, Kanterakis in view of Suzuki teach all subject matter claimed, as applied to claim 14 or 26. Kanterakis further teaches a terminal provided for transmitting a Gold, Kasami or Golay sequence (col.8, lines 24-40) as a signaling sequence during a specific time slot of a transmitting-end reference frame. (note col.11, lines 40-57)

Regarding claim 21 and 32, Kanterakis teaches all subject matter claimed, as applied to claim 14 or 26. Kanterakis further teaches a terminal provided for transmitting a signaling sequence during one of various determined time slots (note col.11, lines 40-57) of a transmitting-end reference frame, and after receiving a provision message (ACK signal) from the base station, for transmitting a terminal identification data packets over at least one contention channel. (note col.9, lines 31-45) Furthermore, it is inherent that the terminal transmits the terminal identification only when the provision message indicates the respective time slot. As previously explained, the provision message includes the time slot information and therefore, transmitting the terminal identification would only occur after the reception of the provision message.

Regarding claim 22, Kanterakis teaches all subject matter claimed, as applied to claim 14. Kanterakis also teaches transmission of a signaling sequence transmitted by plurality of terminals communicating with a base station. (note

col.1, lines 30-43) Furthermore, it is inherent that the signaling sequence transmitted by the terminal is part of a multiplicity of signaling sequence to be used in a radio cell, since there are more than one terminals communicating with the base station requesting for a contention channel each using a different signaling sequence.

Regarding claim 23, Kanterakis teaches all subject matter claimed, as applied to claim 14. Kanterakis further teaches a terminal selecting a signaling sequence to request for one or a plurality of contention channel (see Fig.4, and note col.6, lines 25-35) and further, the data rates are different from the base station. (note col.9, lines 54-61 wherein the terminal informs the base station of the data rate, which may be different from the rate of base station. (note col.9, lines 54-61)

Claims 18-20 and 29-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanterakis (cited previously) in view of Suzuki et a l. (Suzuki) and Jung et al. (cited previously).

Regarding claims 18,19,29 and 30, Kanterakis in view of Suzuki teach all subject matter claimed, as applied to claim 14 or 26. Kanterakis teaches retransmission of signaling sequence, however, does not teach retransmission within a predefined period of time when no acknowledgement of the reception of the signaling sequence. Jung teaches, in the same field of endeavor,

communication between base station and terminal over a contention channel wherein, prior to receiving the provision message, the terminal retransmits signaling sequence within a predefined period of time when no acknowledgement of the reception of the signaling sequence. (note col.1, lines 37-46) Therefore, it would have been obvious to one skilled in the art at the time of invention to implement Jung's teaching of retransmission when no acknowledgement has been received since the terminal cannot wait for too long period of time, nor could terminal retransmit when base station has already received the signaling sequence, as it may be an unnecessary transmission. For the purpose of designing an efficient system, one skilled in the art may implement as such wherein the terminal waits for a predefined period of time before retransmitting.

Regarding claims 20 and 31, Kanterakis in view of Suzuki teach all subject matter claimed, as applied to claim 14 or 26. Kanterakis further teaches increasing energy or power level for transmission. (note col.6, lines 1-19) However, Kanterakis does not explicitly disclose increase of transmission energy or power level to a maximum level within a predefined period of time when no acknowledgement of the reception of the signaling sequence has been received from the base station. Jung teaches this limitation. (note col.2, lines 4-10) Therefore, it would have been obvious to one skilled in the art at the time of invention to implement as such for the purpose of properly transmitting the signaling sequence to the base station in situations where the terminal may be

distant from the base station wherein increase of power level is needed in order for the base station to receive the sequence and further resulting in reception of acknowledgement of reception of signaling sequence by the terminal.

(11) Response to Argument

On page 12 of Indefiniteness Rejection, appellant has amended claims 21 and 22 depending on claim 14, which is entered as listed in the Claims Appendix.

On the second paragraph of page 12, appellant argues that Kanterakis in view of Suzuki do not teach the limitations as recited in claims 14-17,21-28,32 and 33 because Kanterakis in view of Suzuki do not teach or suggest a "signaling sequence" as recited in claims 14,15,17,21-24,26-28 and 32-33. (Please note that the third paragraph on page 12 lists claims 14,15,17-21-24,**26-38** and 32-33.) Appellant argues that the examiner must interpret the words in the claims given their plain meaning unless the Appellant has provided a clear definition in the specification.

Appellant further argues that the specification defines the term "signaling sequence" recited in claims 14,15,17,21-24,26-28 and 32-33 as a **pseudo-random square-wave signal**, as described in the specification (note p.5, lines 27-29). Therefore, appellant argues that Kanterakis does not teach the limitation of "signaling sequence", wherein the signaling sequence is defined as a pseudo-random square-wave signal. Appellant asserts that Kanterakis teaches an

access-burst signal including a preamble does not qualify as a signaling sequence. The examiner respectfully disagrees.

The specification of the present application describes (note p.4, lines 5-8) that *"CDMA method, which is a special code spreading method, binary information (data signal) originating from a user is modulated with a different code sequence. Such a code sequence comprises a* ***pseudo-random square-wave signal*** *(pseudo-noise code)..."*. And also is described that (note p.2, lines 19-20) "a signaling sequence may be a Golay Gold or Kasami sequence..." (which is also a Gold code). Thus, appellant admits that CDMA systems employing a spreading method modulated with the **pseudo-random square-wave signal** is a prior art.

Kanterakis also teaches a CDMA system (note abstract) where signals are modulated with a code sequence through a spreading sequence generator (see 327 in Fig.3 and note col.4, lines 18-19). Therefore, the signals received by the CDMA receiver of Kanterakis are signaling sequence comprising the **pseudo-random square-wave signal**.

The examiner further explains that Kanterakis teaches wherein the random access burst signal (note col.5, lines 63-67) are spread by an orthogonal Gold code (note col.1, lines 17-23, which is also admitted by the appellant on p.2, lines 19-20 in the specification that signaling sequences may be a Golay Gold or Kasami sequence). Kanterakis illustrates in Fig.3 transmission of a signaling sequence by multiplying the output signal by a spreading sequence generator

(327), which generates a **pseudo random square-wave signal**. Therefore, access bursts are transmitted as the signaling sequence (output of 426 in Fig.4) by multiplying the access bursts (output of Gain coupled to 425) by the spreading sequence generator (427).

On page 14, appellant argues that Kanterakis in view of Suzuki and Jung do not teach the limitations in claims 18-20 and 29-31 because Kanterakis in view of Suzuki does not teach or suggest a "signaling sequence" as recited in claims 14, 18-20,26 and 29-31.

Appellant argues that the term "signaling sequence" has been defined in the specification (at page 5, lines 27-29), therefore, the access-burst signal of Katerakis that includes a preamble does not qualify as a signaling sequence. Again, the examiner respectfully disagrees.

The specification of the present application describes (note p.4, lines 5-8) that *"CDMA method, which is a special code spreading method, binary information (data signal) originating from a user is modulated with a different code sequence. Such a code sequence comprises a* ***pseudo-random square-wave signal*** *(pseudo-noise code)..."*. And also is described that (note p.2, lines 19-20) "a signaling sequence may be a Golay Gold or Kasami sequence..." (which is also a Gold code). Thus, appellant admits that CDMA systems employing a spreading method modulated with the **pseudo-random square-wave signal** is a prior art.

Kanterakis also teaches a CDMA system (note abstract) where signals are modulated with a code sequence through a spreading sequence generator (see 327 in Fig.3 and note col.4, lines 18-19). Therefore, the signals received by the CDMA receiver of Kanterakis are signaling sequence comprising the **pseudo-random square-wave signal**.

The examiner further explains that Kanterakis teaches wherein the random access burst signal (note col.5, lines 63-67) are spread by an orthogonal Gold code (note col.1, lines 17-23, which is also admitted by the appellant on p.2, lines 19-20 in the specification that signaling sequences may be a Golay Gold or Kasami sequence). Kanterakis illustrates in Fig.3 transmission of a signaling sequence by multiplying the output signal by a spreading sequence generator (327), which generates a **pseudo random square-wave signal**. Therefore, access bursts are transmitted as the signaling sequence (output of 426 in Fig.4) by multiplying the access bursts (output of Gain coupled to 425) by the spreading sequence generator (427).

In summary, appellant argues that Kanterakis does not teach the limitation of signaling sequence, which is defined in the specification as a pseudo random square-wave signal. As previously explained and admitted by the appellant, transmitting and receiving pseudo random square-wave signals are the fundamental characteristics of any CDMA system signals, including the CDMA system of Kanterakis.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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May 27, 2005

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